

I CLAIM,

1. A secondary burner for a sealed combustion chamber of a gas-fired hot water heater comprising a support base for supporting a hot water heater housing elevated from a floor surface, said sealed combustion chamber being supported over said base under an inner casing of said hot water heater adapted to contain water to be heated by a primary burner in said combustion chamber, an air inlet port in a bottom wall of said combustion chamber to supply combustion air to said primary burner, a secondary gas burner perforated disc secured entirely across said air inlet port and in direct unobstructed communication with said primary burner, said secondary gas burner perforated disc having holes throughout said inner surface whereby to ignite on said inner surface thereof in the presence of flammable vapors and air entering said gas burner perforated disc from an outer surface thereof, said support base having air inlet openings to permit ambient air supply to said outer surface

2. A secondary burner as claimed in claim 1 wherein said perforated disc is a metal disc which is perforated and capable of resisting to high temperatures generated in said sealed combustion chamber, said metal disc having a thickness in the range of from about 1/8 inch to about 3/4 inch.

3. A secondary burner as claimed in claim 2 wherein said metal disc is a stainless steel disc.

4. A secondary burner as claimed in claim 1 wherein said perforated disc is a wire mesh disc of woven warp and weft metal wires capable of resisting to high temperatures generated in said sealed combustion chamber, said wire mesh disc having a thickness in the range of from about 1/8 inch

to about 3/4 inch, said perforations being created by interstices between said warp and weft strands.

5. A secondary burner as claimed in claim 1 wherein said air inlet openings are screened openings to permit external access to lint and dust collecting on said screened openings thereby substantially reducing the risk of lint and dust depositing on said outer surface of said gas burner perforated disc.

6. A secondary burner as claimed in claim 1 wherein said perforated disc is a ceramic perforated disc.

7. A secondary burner as claimed in claim 1 wherein said support base has a perforated circumferential side wall.

8. A secondary burner as claimed in claim 1 wherein there is further provided a high temperature sensor secured in relation to said sealed combustion chamber to sense temperature in said combustion chamber, and a gas valve operated by said sensor to cause said valve to cut a gas supply to said primary burner and a pilot associated therewith upon said sensor detecting a predetermined high temperature.

9. A secondary burner as claimed in claim 8 wherein said high temperature sensor is secured inside said sealed combustion chamber.

10. A secondary burner as claimed in claim 8 wherein said high temperature sensor is secured on an outer surface of a wall of said combustion chamber to sense the temperature of said wall as a function of the temperature inside said combustion chamber.

11. A secondary burner as claimed in claim 1 wherein said secondary gas burner perforated disc is secured a predetermined distance under said primary burner and concentrically aligned therewith whereby flammable vapors entering said combustion chamber will be ignited by said primary burner and cause a flame to burn of said inner surface of said secondary burner.

12. A secondary burner as claimed in claim 12 wherein said perforated disc is welded about or over said inlet port.